

Tangible Computing in the Humanities and Sciences

IML 535 | 4 Units | SCI 209

Spring 2018

Thursdays 1:00-3:50pm

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Course Description

Tangible (sometimes called graspable) interfaces are systems that use physical objects as controls and displays for digital information. Through the use of sensors and other electronics, these objects can be seamlessly integrated with digital systems, facilitating interaction that goes far beyond the usual WIMP (windows, icons, menus, pointer) paradigm, extending computation into the everyday physical world.

This course is an introduction to the field of *tangible computing*, and is designed to introduce students (with or without a background in engineering or computer science) to this field, as well as to provide some hands-on experience in the design and production of new kinds of interactive objects.

Related fields include ubiquitous (or pervasive) computing, augmented reality, the Internet of Things, circuit bending, projection mapping, physical computing and the maker movement. Each of these disciplines has their own particular emphasis and paradigms, but they all share an interest in moving beyond the screen and out into the larger world.

The course will be a combined seminar and lab, merging discussion and the exploration of theories and concepts with hands-on programming, tinkering, hacking, soldering, making and dismantling. There will be an emphasis on a critical investigation of the premises that underlie the tools we use, as well as the tactical misuse of technology. There will be a particular focus on emerging technologies such as microcontrollers and 3D printing and fabrication.

Using open source hardware and software platforms (such as Processing and Arduino), students will acquire a foundation in the principles of tangible computing, procedural thinking, and interactive design. The class will include extensive readings, and a high level of engagement is expected in discussion sessions.

[full syllabus to follow]

